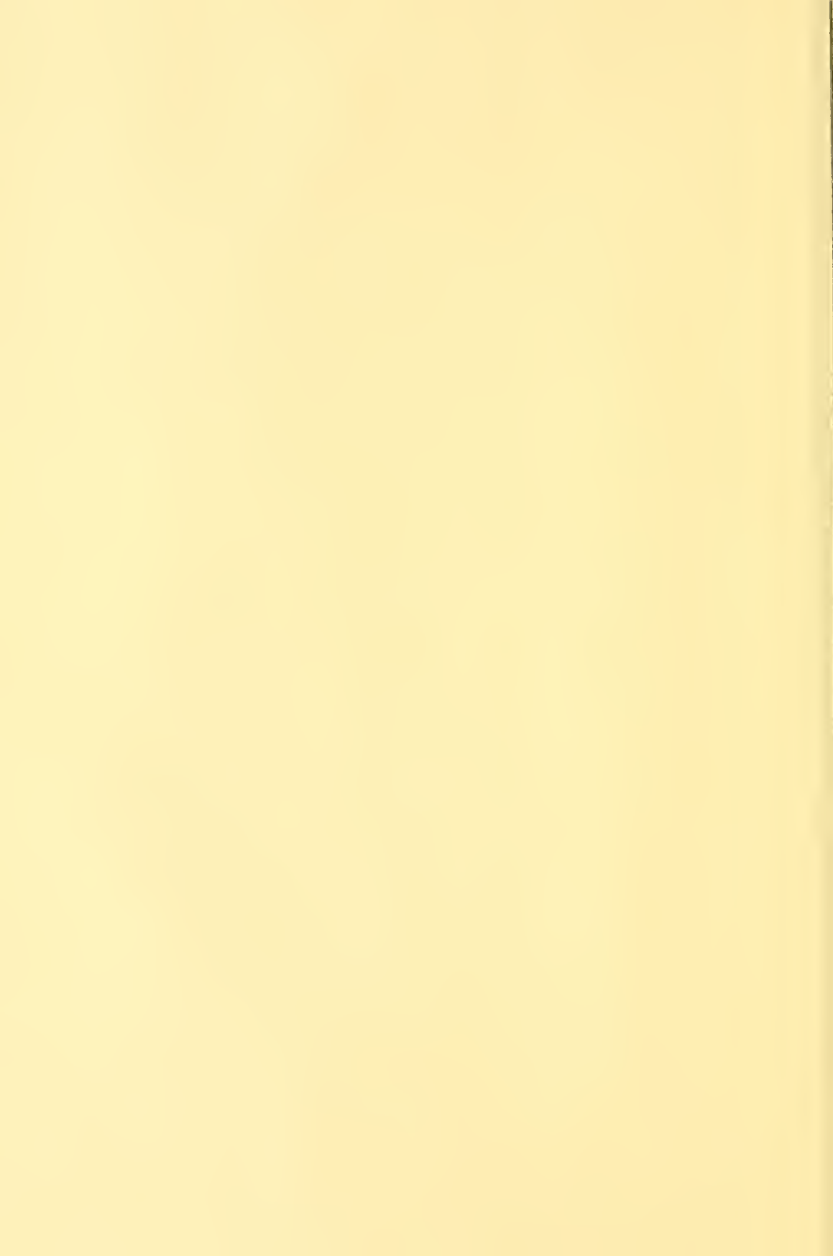


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ARNOT, PENNSYLVANIA

A TIOGA COUNTY MINING TOWN

THE EARLY YEARS

BY

John L. Sexton

1874

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ARNOT, TIOGA COUNTY, PA.

MINES AND MINING.

BY JOHN L. SEXTON, JR.

ARNOT, situated on Johnson Creek, four miles southwest of Blossburg, is one of the leading mining towns in the coal regions of Tioga County, Pa. By an act of the Legislature of Pennsylvania, approved April 11, 1866, Constant Cook, John Arnot, Charles Cook, Henry Sherwood, Franklin N. Drake, Ferral C. Dinny, Henry H. Cook, and Lorenzo Webber were incorporated under the title of Blossburg Coal Company. At this time the Fall Brook and Morris Run Coal Companies were in successful operation. The market for coal at that time, apparently did not warrant the expense of developing new coal fields in that vicinity. However, a contract was entered into by the Blossburg Coal Company with Messrs. Sherwood & McLeon, to build a railroad from Blossburg to their coal fields. This road the contractors finished during the summer of 1866. A wagon road connecting with the Williamson road, near the Bellmon stand, was opened, and a steam mill erected for the purpose of supplying the necessary lumber for the erection of tenements and other buildings which the company would require in their operations. Before, however, the mill was completed, a log-house was constructed for the accommodation of the workmen, which is still standing, a memento of by-gones. As soon as the mill was in operation other buildings sprung up in an incredible short space of time.

Drift No. 1 was put in during this year (1866), demonstrating the existence of coal.

Other openings were made during the years 1867-68, showing still further evidence of the deposits of the carboniferous age.

The prospects for coal were so good that the company felt warranted in purchasing the Tioga railroad, extending from Blossburg to the State line at Lawrenceville, also the road from Blossburg to Morris Run, making in all thirty-four miles. The company further made arrangements with the Fall Brook Coal Company for transportation of coal over their road from Lawrenceville to Corning. They now had railroad facilities connecting them with the Erie road at Corning, and commenced mining coal on an extensive scale. Their shipments for the year 1873 will compare favorably with those of companies of longer standing. We subjoin the shipments for the year, ending January 1, 1874 :

Fall Brook.....	312,466
Morris Run.....	357,384
Blossburg Coal Co.....	321,207

Total.....991,057

The Blossburg Company have annually increased their facilities for mining, and to-day, June 1, 1874, the mines are capable of producing 2,000 tons per day of ten hours. They have directly and indirectly employed in their business at Arnot, a force of 900 men. Should they mine up to their capabilities their annual product would be over 600,000 tons. The reader may ask, would not this soon exhaust their resources? No. The company own over 20,000 acres of mineral land situated nearly in the centre of the third coal basin, and it is fair to presume that even at this figure they will pursue their mining operations for many years.

Two seams or veins are now worked, located in the coal measures about one hundred and fifty feet above the other. The seams are from 2½ to 4½ feet thick. Every cubic yard produces a ton of coal when cleansed ready for market. The statement in relation to this vast area of coal is based not on actual explorations or surveys, but from geological inferences and present indications.

It has been claimed by some geologists that they were able to read the stratification of the earth like a book. But they must remember that this book of nature is an old one, that for ages it has been *thumbed* and handled, so to speak, by earthquakes, mountain streams and rivers, that the leaves in this great book have been torn and displaced. It is not unfrequently the case in this Blossburg region that the upper strata by some great convulsion of the earth has been thrown down over the lower. Thousands of dollars have been spent in Tioga County in reading this chapter pertaining to the carboniferous age. The geologist cannot calmly sit in his cabinet surrounded by fossils, slates and rocks, and

determine the altitude or depression of the coal measures. He must go out and study the physiognomy of Nature. A river or a small mountain stream may wear out the base of the coal measure, causing the upper stratification to slide down over the

lower, and lead the geologist or explorer to seek for coal a hundred and fifty feet or more below its true position. Therefore, it is of the utmost importance that an explorer for coal or other minerals should be well acquainted with the topography and physiognomy of the locality under survey. Old hunters and others not learned in the science of geology have frequently met with great success in exploration from their knowledge alope of the physiognomy of the region to be examined. We have made these suggestions for the reason that many have been misled by geological theorists, not for a moment doubting, from our knowledge of the lands of the Blossburg Company, that they contain coal to an almost unlimited extent.

INCLINE AND MINES.

The view represents the incline at plane drift No. 4. This incline is 1,050 feet long with an elevation of 150 feet. The small cars containing from 1,050 to 1,500 lbs. are hauled by mules from the mines to the head of this incline, and are then by means of a drum and cable, let down to the foot on a level with drift No. 2. Here they are coupled with those coming from the latter drift, and hauled by one of Smith & Porter's locomotives, of Pittsburg, Pa., a distance of nearly a half mile to the chutes (see engraving).

The guage of the mining wagon is two feet six inches, that of the locomotive, three feet. A third rail is laid for the locomotive. The T rails are used, weighing from 25 to 30 lbs. to the yard.

In order to judge of the relative expense between steam and mule power, we were permitted by Mr.

Thomas Llewellyn, the engineer, to take a seat in the cab, and witness the work of the locomotive.

It moved 125 tons 2,000 feet, on a grade of 30 feet to the mile, and returned mining wagons in 55 minutes. He informed me that his average movement was 1,000 tons per day of ten hours. The engine is ten horse power. It would take 12 mules to move that amount of coal in the same time with more than double the expense, saying nothing of the vexation and profanity incident to their use.

After satisfying ourselves in relation to the merit of this engine, we walked over to the incline at drift No 5. Here is an incline 2 000 feet long, with the same elevation as No. 4, viz.: 150 feet. Instead of using a drum here, two wheels placed uprightly and moving horizontally with wire cable, are the appliances used in letting the coal down to chutes at drift No. 3. Being well acquainted with the process of mining, we did not go into the interior of the mines at Arnot, for the reason the same general plan being adopted in all of the mines in the semi-bituminous coal fields of northern Pennsylvania.

In opening and putting in a drift, the first thing necessary to determine, is the inclination of the seam to be worked. This is determined in two ways, either by sinking shafts and leveling from point to point, or by drifting. Both depend upon the face of the land and stratification of rocks. In some instances a drift can be put in cheaper than a shaft can be sunk. After having determined the "dip" or pitch of the seam, a tunnel gangway or road is driven into the mountain until you reach the outcrop of the coal.

The coal, in what is known as the Bloss vein, rests upon stratified fire clay, which is smooth and affords a good foundation for props. The slate and rock, or covering, as it is termed, varies in thickness from 30 to 150 feet. In this vein the coal is usually about 4 feet. To admit a mule or engine the top is blasted down sufficient for their entrance. The gangway is usually about nine feet wide for a single track; but where switches and turnouts are required, it is made wider and propped in the center. The gangway alluded to is driven in a straight line, and from it other gangways are driven at right angles and termed "headings." An inside view of the mines would present a diagram similar to a checkerboard, alternate sections being worked and propped, and the remainder left as pillars or supports. The main gangway is driven to the outcrop, and sometimes clear through the mountain (*vide* Fall Brook and Morris Run). This course assists in ventilation.

An air passage, which is a narrow gangway, is also driven parallel with the main gangway, through which cool air is forced into the mines by means of this passage, a shaft and furnace near the entrance of the drift. So well have the different companies in this section mastered this important work that they have never been delayed for want of proper ventilation. As new headings are driven from the main gangway, other air passages are opened and former escapes closed and made air-tight by means of bradishies and a mortar of soft fire clay.

The cars or mining wagons are drawn into the mines by mules or engines and distributed properly to the men in the different headings. Filled wagons are ready to be pushed out on the crossings, and are soon made up into trains and dispatched to the chutes. There is a train dispatcher stationed at the mouth of the drift, who regulates the arrival and departure of trains with the same regularity and precision as is practised on our first-class railways.

To prevent the current of air taking into the gangway alone, doors are placed upon it, and a boy stands there for the double purpose of opening and closing it after the passage of a train and for signals. By this means, the dispatcher can determine the locality of each driver in a very short space of time. Collisions and accidents rarely occur. This department is entrusted to the most careful and competent workman, who is known by the appellation of boss mule driver. The title is not very high sounding, but the place is one that requires judgment, and constant attention to duty. The props used by the miner are made from sound timber, the desired length being usually two inches shorter than the thickness of the coal, for the purpose of admitting caps or wedges. For instance, if the coal was four feet thick, the props would be cut three feet ten inches. These props are selected by the miners at the mouth of the drift, and their number or name written upon the end, and are taken by the driver into the mines, and distributed per order. If two veins are worked, one above the other, these props are usually placed in rows three feet apart. If only one vein is worked, they are placed four feet apart. This item of props amounts to quite a business. To mine a hundred thousand tons would require at least forty thousand props. We did not make the inquiry, but presume the company, for the year ending Jan. 1, 1874, used one hundred and twenty thousand props, and two hundred and forty thousand caps, or wedges.

The tracks in the main gangways are of iron. There are miles of this narrow gauge beneath the mountain in the mining district, with improved frogs, switches and latches. Gangs of men are constantly employed in keeping these roads in repair. We have said that from the main gangway others were driven at right angles. Pillars, 33 feet wide, are left between the gangways and breasts. The *breasts*, or chambers, are worked usually 54 feet wide and 180 feet long. Between each breast is a pillar 45 feet wide and 180 feet long. This will apply to drifts where two veins are worked, one above the other. Where only one vein is worked, the chambers are larger and the pillars smaller, the miner depending more upon the props spoken of for his safety and protection. When these chambers have been worked to the outcrop, a retrograde movement is taken. The pillars are "*drawn*," as it is termed. The work of doing this commences at the outcrop, and proceeds towards the mouth of the drift. If there is only one vein, the mountain is allowed to settle as fast as the coal is removed. So firm is the top, that sometimes too large an area falls at once which has the effect of creating a miniature hurricane. This, however, is not often the case. Scarcely any waste occurs if this process is properly managed.

THE MINER AND HIS TOOLS.

The pick used in mining will weigh from 2½ to 3½ lbs. with the handle. It is pointed with the best of steel, and drawn down so small at the point as a first-class hay fork. His lamp is made like a miniature coffee pot without the handle, and will hold less than a half a gill of oil. Instead of a handle there is a hook by which he is enabled to attach it to his cap or hat. His lamp answers a double purpose, that of affording light, and also of computing the hours. An experienced miner will be able to tell quite accurately the time of day by keeping count of the number of lamps of oil used. The best kind of whale or lard oil is used by the miner. If he is working in a heading he requires drills, sledges, needles, and powder. Powder and wedges are sometimes used in breasts or chambers. Coal is much lighter than gravel or earth, and the miner uses a No. 6-shovel.

It makes no difference with him if the coal is six feet high and he can stand upright in the chamber, he is obliged to lie down on his side and undermine at the bottom of the vein. Here is where the serious work of the miner commences, his position is not an easy one. To lie on his side on a hard floor and undermine a "fall," is no easy task. Short props, ten or fifteen inches in length, are placed under the coal to keep it up until he shall have undermined a sufficient quantity to complete his day's work. When this is done the props are taken out, and the coal permitted to fall. If it does not fall

readily, he either takes a wedge and drives in between the coal and the rock on the top, or puts in a small squib of powder, and blasts it down. When this is done, he breaks the coal up into suitable size for loading into wagons. The particular point of danger in mining is in the undermining. Miners are apt to become careless, and neglect to prop up as they should, and many of the accidents occurring at the mine result from this cause. We believe that mining in the coal fields in Tioga County is a safer business than lumbering, if proper care is exercised. For several years we kept a record of the accidents occurring in the mines at Fall Brook, and found according to the number of day's work done, that there were fewer casualties in the mines than in the lumber department. But to a man who has ever been accustomed to sunshine and daylight there is something disagreeable in the darkness of the mines. The miner, however, is as cheerful at his work as the accountant at his desk, or the farm boy at his plow. They will rank in conviviality with any other class of men. One would naturally suppose they would be gloomy and long visaged, but this is not the case, their mirth and hilarity is proverbial. They are very fond of associations, as will be seen by reference to the societies organized in these mining towns.

Amount of labor done: On a four foot vein a strong and experienced miner will dig six tons per day of ten hours. Many are able to go beyond this figure, and some fall below. In 1863 at Fall Brook, Mr. Daniel Williams mined 200 tons in a month of 22 days, being a little over nine tons per day. This, however, is an exception. The average miner in a breast or chamber, will dig and send out from $4\frac{1}{4}$ to 6 tons per day, and continue for months at this average.

Their clothing, while at work, is composed chiefly of wool. A heavy woolen shirt and drawers

with overall of twilled duck, long woolen socks and a strong pair of cowhide mining shoes well nailed, constitute their working dress. Their vest and coat, which are worn to and from the mines, are also of heavy woolen material. When they leave the mines after performing their day's work, they are blackened by coal dust to that degree that persons seeing them go into the mines in the morning can scarcely identify them at night, unless they have had some experience in the mining district. On their return home they take a bath in warm water, change their clothes and come forth as fresh and clean as any gentleman in the land.

The town now contains 361 dwellings, 425 families, and a population of 3,450. Like Fall Brook and Morris Run, it has churches, schools, stores, markets, halls, bakeries, mills, smith and wagon shops, etc., etc. The supply store of the company is a large wooden building divided into several departments, where everything needed in the household is kept on sale for the accommodation of the employes. On the second floor is the office of H. J. Sandrus, manager, and Frederic Wingrave, paymaster, and his assistants, Andrew Bowers and D. W. Caldwell. The telegraph office is located on this floor also. The railroad passes on the north side, near the platform, where goods can be discharged from the cars immediately into the store room.

The company have a very fine mill located a few rods northeast from their store. This mill manufactures about 3,000,000 feet of lumber per year. The company have another mill near their railroad track on the west side of the Tioga river at Blossburg, where they manufacture to order lumber for building purposes. About 3,000,000 feet of lumber is made here, consisting of flooring, planed, ploughed, and grooved; siding, etc., etc.

The company have extensive transfer chutes and trestles near Warkins, N. Y., where the coal is shipped in boats on Seneca Lake.

A great amount of money is required to carry on the extensive business of the company. The pay roll for the month of May amounted to about sixty thousand dollars. This company and the Morris Run and Fall Brook Coal Companies pay to their employes during eight months of the year at least \$130,000 per month, amounting to over a million dollars per year. This amount annually distributed in these mining towns is felt throughout the entire

limits of the county, and even into neighboring countries in the State of New York. Coal has become a staple commodity. It has banished the old fashioned fire place even in the forests of Pennsylvania. It is sold at \$2.75 per ton at the mines, and no one can afford to cut wood for a stove or fire place if he values his time worth anything. In the older settled portions of the country it is also in great demand. Coal is as cheap fuel, at \$5 or \$6 per ton, as hard wood, prepared at \$3 per cord. The great waste of timber complained of by many can now be obviated. In thickly settled portions of our country where timber is scarce, this fuel will enable the people to save and preserve their groves. It will stay a timber famine for at least half a century; in that time our forests will be replenished. There is coal enough in Tioga County alone to supply the great State of New York with fuel for years to come.

The present officers of the Blossburg Coal Company are F. N. Drake, president; H. H. Cook, treasurer; F. C. Dininy, superintendent; H. J. Sandrus, manager at Arnot.

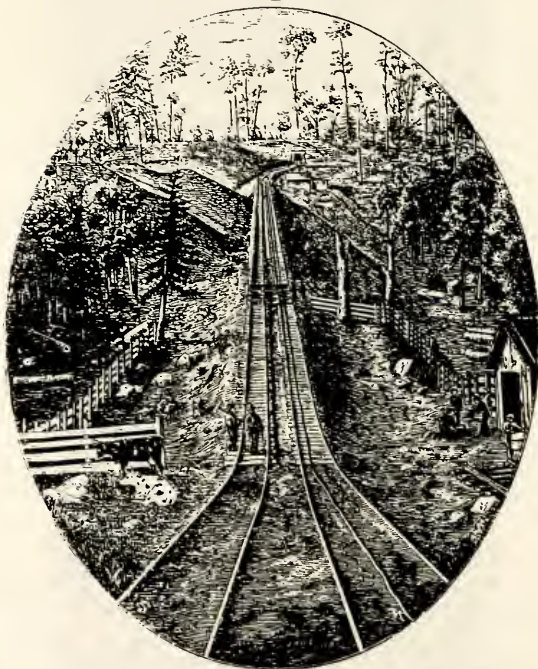
J. K. TILLOTSON & Co.

A building was erected in Arnot by the Blossburg Coal Company, in May, 1873, which was leased to H. S. Drake for general mercantile purposes. Mr. Drake died in December of the same year, whereupon the management of the business was given into the hands of J. K. Tillotson, of Elmira, manager of the Weed Sewing Machine Company's branch office in that city. Mr. Tillotson, on taking hold of the business thoroughly systematized it, and classified it. In one department he placed produce of all kinds, light groceries, in general assortment, and canned goods of every description. In another department were grouped the drugs and medicines, in connection with which was established a first-class bakery. Then comes the third department, consisting of one of the finest as well as largest assortments of ready-made clothing hats, caps, mittens and furnishing goods to be found in Tioga County. In a fourth department is a well-ordered meat market. These several departments are connected with each other for the convenience of customers, but each has distinct management.

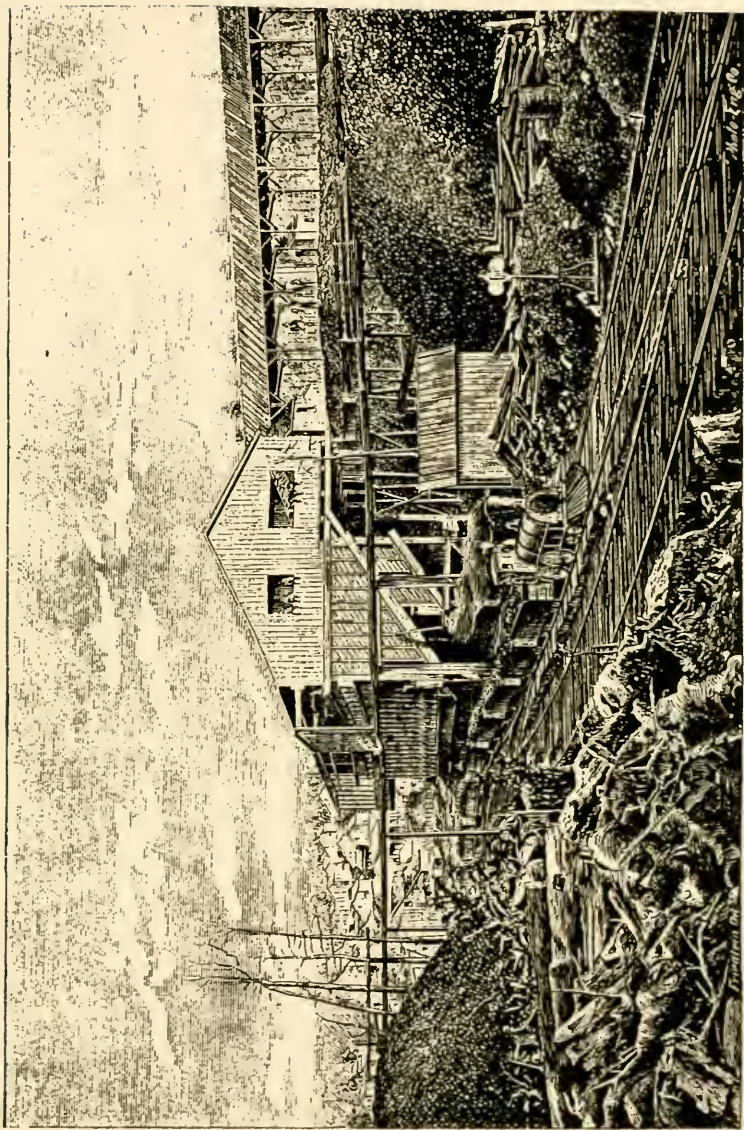
The entire business requires the services of ten persons, a fact which gives a good idea of the business done. Mr. Tillotson's most valued aid and as-

sistant manager in the absence of himself, is Mr. S. M. Fassett, formerly of Elmira.

We have thus presented a concise yet comprehensive view of the young town of Arnot. Its past career is a guarantee of its future, for where enterprise and thrift once take hold of a community, they remain ever afterward as a chief characteristic.



THE INCLINE-ARNOT, PA.



THE CHUTES—ARNOT, PA.

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